Temple renovations, aggregate *marae*, and ritual centers: the ScMo-15 Complex, Lower Amehiti District, ʻOpunohu Valley, Moʻorea (Society Islands)

Jennifer G. Kahn

This article describes test excavations of two marae *(temples) in the lower Amehiti sector of the ʻOpunohu Valley, Moʻorea. Recent projects in the ʻOpunohu Valley have dated temple sites in the upper reaches of the Tupauruuru District, while those resting in lower valley elevations, where residential settlements and ritual complexes tend to be most frequent, have been lacking. The test excavations described here were designed to recover data relating to* marae *construction sequences and to recover wood charcoal for radiometric dating. The results offer important evidence concerning the only aggregate* marae *center found in the Amehiti District. These new data require a slight modification of interpretations of ʻOpunohu Valley settlement patterns and their relationship to status and hierarchy in this highly productive windward valley context.*

Este artículo describe las excavaciones de prueba de dos marae *(templos) en el sector bajo de Amehiti, Valle de ʻOpunohu, Moʻorea. Recientes proyectos en el Valle de ʻOpunohu han fechado sitios con templos en el curso superior del distrito de Tupauruuru, mientras que en aquellos proyectos que se encuentran en elevaciones más bajas del valle, donde los complejos rituales y de asentamientos tienden a ser más frecuentes, no ha sido así. Las excavaciones de prueba descritas aquí fueron diseñadas para recuperar información relativa a las secuencias de construcción de los* marae *y para rescatar carbón de madera para su datación radiométrica. Los resultados ofrecen evidencia importante acerca del único centro colectivo de* marae *hallado en el distrito de Amehiti. Esta nueva información requiere de una leve modificación de las interpretaciones en los patrones de asentamiento del Valle de ʻOpunohu, además de su relación con la posición y jerarquía en un contexto de valle protegido y altamente productivo.*

Introduction

The ʻOpunohu Valley is the largest windward valley on Moʻorea, second largest of the windward islands of the Society archipelago. The valley is divided into two main districts, Tupauruuru (eastern sector) and Amehiti (western sector) (Figure 1). Despite the long history of archaeological research in the ʻOpunohu Valley (Green 1961; Green & Descantes 1989; Green et al. 1967; Kahn 2003, 2005a, 2006, 2007, 2010, 2011; Kahn & Kirch 2003, 2011; Lepofsky 1994; Lepofsky & Kahn 2011), few archaeological excavations have been carried out at *marae* or ceremonial temple sites in lower portions of the Amehiti District. Previous research has suggested that Amehiti lacks the same level of temple elaboration as that found in Tupauruuru and has a reduced frequency of high status residential or specialized sites (Green 1996), leading some to argue that the Amehiti District housed individuals of somewhat lower status than those found in Tupauruuru.

Archaeologists worldwide have argued that monumental public architecture served as one particular strategy for elites to proclaim and maintain socio-political power (DeMarrais et al. 1996; Trigger 1990). In many complex societies, elites promulgated divine descent. Rituals carried out by divine rulers at public monuments both legitimated structures of authority and generated political authority, through elites' perceived capacity as the 'proper' conduits to the sacred (Carballo 2012; Kahn & Kirch *in press*). The elaboration of monumental spaces on the landscape, and their increasing exclusivity and/or isolation through time, likewise served to consolidate elite power and authority (Kahn & Kirch 2013; Siegel 1999). Etic views of monumental architecture typically confirm the religious and political nature of such monuments. For example, Maya kings and rulers actively commissioned temples and dynastic monuments to "express the power of their governments and their relationships within and between realms" (Friedel 1992:120). Society Islands ethnohistoric documents illustrate how pre-contact Maʻohi social groups actively competed in tribute presentations to the elites which took place at monumental temples. This tribute was largely

Jennifer G. Kahn | College of William and Mary, Williamsburg, VA, USA

appropriated by the elites into the political economy (Moerenhout 1837[I]:518), illustrating the intertwined nature of rituals at monumental sites, the economy, and political power.

Because temple sites are the main form of 'public architecture' in traditional Society Island chiefdoms and provide a key material index of ideological control and social power for ruling elites, testing models of status and residence in the 'Opunohu Valley requires a broad testing and sampling methodology. As I will argue, more detailed research is required in the lower Amehiti District, as a dense concentration of temples, shrines, and residential sites suggests the presence of an aggregate ritual center of some import at the ScMo-15 Complex (Kahn 2011). Data from surface mapping, test excavations, and radiocarbon dating at ScMo-15 are reported here to illustrate the nature of aggregate *marae* complexes in Amehiti and their relationship to socio-political status and settlement patterns. As will be argued, the presence of the ScMo-15 aggregate complex problematizes accepted models of 'Opunohu Valley settlement, as it appears to represent a somewhat high-ranking site situated within a zone typically classified as being of lower status than the Tupauruuru sector.

A second impetus for this project was the knowledge that the lower Amehiti sector was to be targeted by the French Polynesian government for agricultural development. Realizing that such development might lead the lower Amehiti sites to be at risk, I carried out limited test excavations in 2006 at two *marae*, ScMo-15H and ScMo-15B, found in a substantial archaeological complex that had already been impacted by an access road for logging. The aim was to recover wood charcoal samples from test pits in these *marae* enclosures to submit for AMS radiocarbon determinations. In this article, I discuss the test excavations at these two temples, providing data on site context, site stratigraphy, and the sub-surface features encountered in the excavations. I end with a discussion of the dated archaeological contexts and their implications for modeling social change in the late prehistoric Society Island chiefdoms.

'Opunohu Valley Survey Data

Survey data for 'Opunohu Valley *marae* are extensive but are biased towards the Tupauruuru sector; portions of the Amehiti sector remain unexplored or have

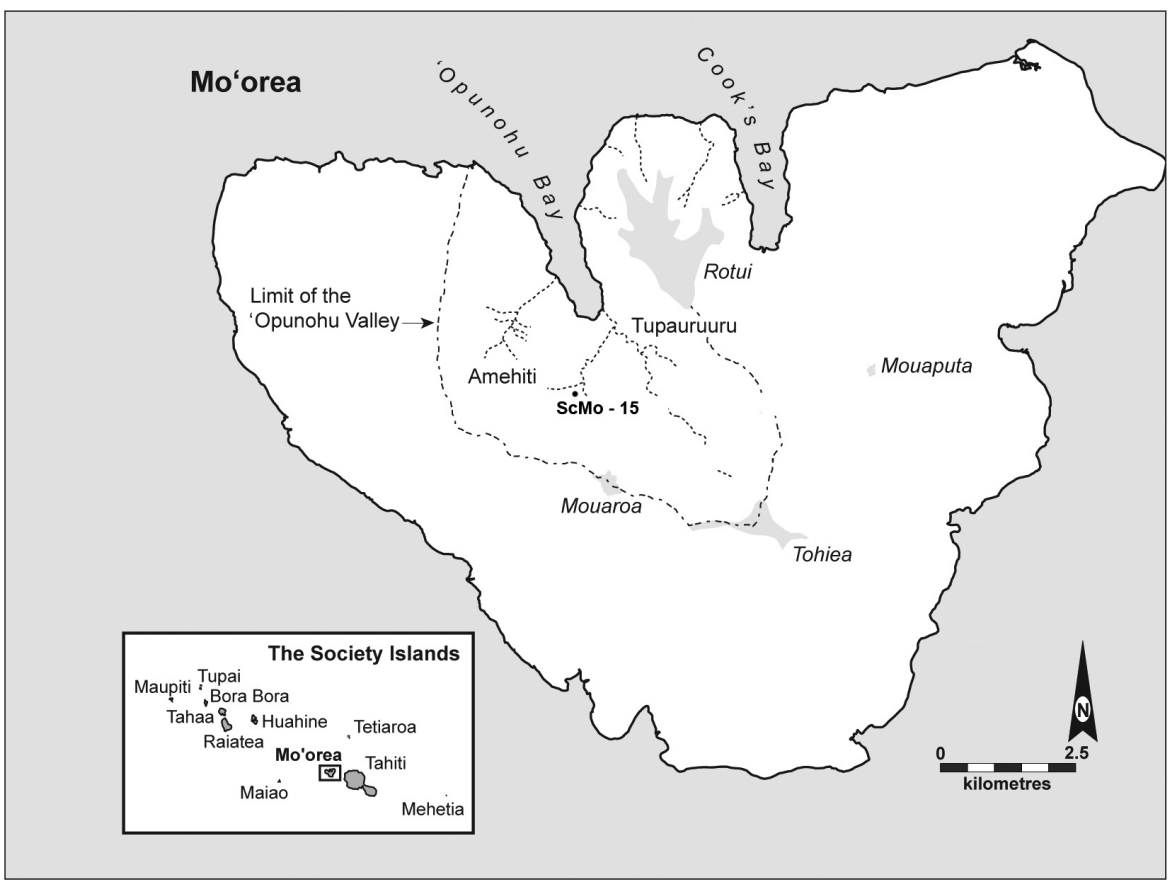

Figure 1. Mo'orea Island and the 'Opunohu Valley, showing the Tupauruuru and Amehiti districts and location of ScMo-15 along the lower Amehiti flat.

already been impacted by development (Figure 1). In his exploratory monograph on Society Island "stone remains", Emory mapped and described two temple sites in Tupauruuru (1933:106-107, Figures 70, 71). Green's pioneering settlement pattern research in the 'Opunohu Valley, carried out during 1960-1962 (Green 1961; Green et al. 1967), resulted in the mapping and description of over 145 religious structures (*marae* and shrines[1]) (Green & Descantes 1989), the majority of which were located in the Tupauruuru District. Green did describe fifteen temple sites and twenty shrines in Amehiti, noting that temple sites in this district were often less elaborate than those found in Tupauruuru (Green et al. 1967; Green & Descantes 1989).

Recent field reconnaissance and site survey by the author in the Amehiti sector (Kahn 2002, 2005b, 2005c; Kahn & Kirch 2013; Lepofsky & Kahn 2011) has similarly added to Green's original data, describing six newly discovered *marae* and shrines in this understudied portion of the valley. Collectively, the extant survey data clearly demonstrate significant variability in 'Opunohu Valley temple architecture, likely relating to change through time, varying *marae* function, and diachronic shifts in social status and relationships between social groups. Temple structures from at least three main categories of *marae* (community, specialist, and family) are represented in Amehiti, while the most elaborate forms with stepped altars are only found in the Tupauruuru sector.

Excavation Results for 'Opunohu Valley *Marae*

The size and morphology of Society Island temples changed over the c. 750 years of pre-contact Ma'ohi settlement, with a general trend towards greater elaboration and monumentality. Recent 'Opunohu Valley syntheses illustrate that simple temples were constructed in the valley as early as AD 1350 (Kahn 2011). A number of *marae* types were constructed during the 15th-16th centuries, including simple *marae* lacking *ahu* (altars) which likely served as family *marae*, with more elaborate *marae* with *ahu* being constructed ca. AD 1400–1650 (Kahn 2011). Sharp and colleagues' (2010) precise U-TH chronology documents the rapid advent of temples with coral incorporated into their altars between ca. AD 1620–1760. Thus, the largest and most elaborate temples were constructed in the period just prior to European contact.

Archaeological data, as well as ethnographic sources (Eddowes 1991; Green & Green 1968; Oliver 1974) describe how many Society Island ritual sites were renovated, elaborated, or enlarged through time. In the 'Opunohu Valley, temples in aggregate *marae* sites can span multiple episodes of site elaboration, with individual sites being renovated and/or the complex seeing the addition of new structures. Most aggregate centers see episodes of site elaboration in the period between AD 1400–1650, and a second period of site efflorescence after AD 1650 (Kahn 2011). As outlined in the following section, data from ScMo-15 exhibit similar trends and thus add to the corpus of evidence suggesting that excavation sequences are needed to clearly outline temple renovation events which can be difficult to identify based on surface remains alone.

The ScMo-15 Site Complex

First mapped by Green in 1960 (see Green & Descantes 1989:23-26), ScMo-15 is situated in the Amehiti sector along the lower valley flat (Figure 2). This area has been subject to much modern development; recent surveys (Kahn 2002; Lepofsky 1994) have noted that many site complexes in lower Amehiti first described by Green are now destroyed. Because this area was likely to be subject to further development, the ScMo-15 Complex was considered as a high priority for immediate excavation. Unfortunately, since the study described here, ScMo-15 was indeed impacted by a new pineapple plantation, and the lower *marae* (15B) was completely destroyed by bulldozers.

The ScMo-15 Complex has several interesting features, including a high density of house sites associated with two *marae* (Tables 1 and 2). Structure

Table 1. General characteristics of *Marae* sites ScMo-15B, 15H.

Site #	*Marae* Type	Enclosure Size (l x w)	*Ahu*	Unique Characteristics
ScMo-15B	IIIi	20.2 x 9.0 m	No	Well-paved court with stone uprights and backrest stone; two paved shrines attached to exterior of enclosing walls; walls of *marae* are of simple construction, in two parallel alignments
ScMo-15H	IIIc	13.5 x 9.0 m	Yes	Detached *ahu* with worked stones (loaf-shaped stones) and cut and faced basalt slabs; well-paved enclosure with uprights

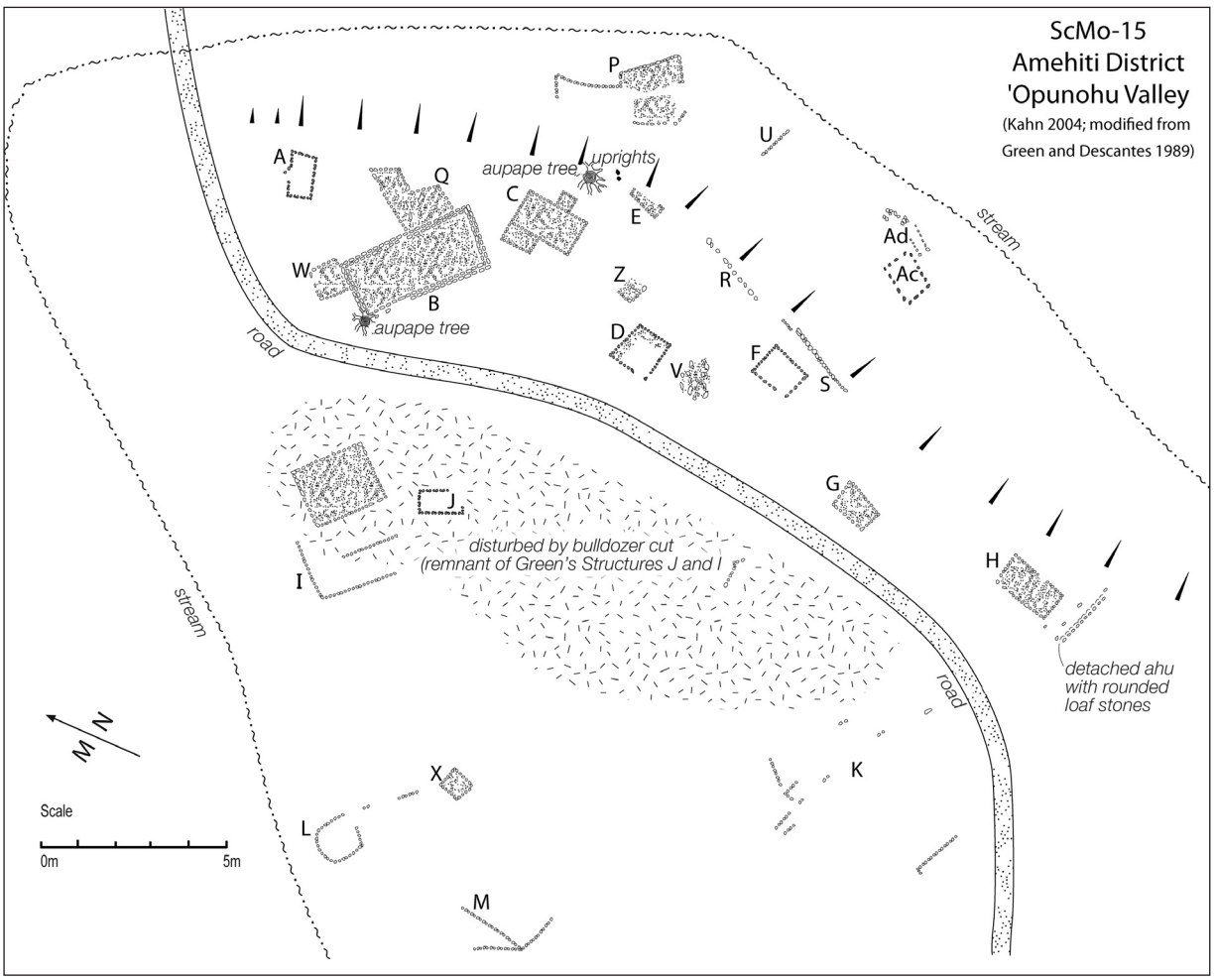

Figure 2. Plan View of the ScMo-15 Aggregate *Marae* Complex.

15H is the most upslope structure in the complex and is an *ahu*-bearing *marae,* Type IIIc (following Green's [1961:171] classification of 'Opunohu Valley *marae*) (Table 1). This temple incorporates loaf-shaped worked stones in its architecture and is one of only four temples in the valley exhibiting such elaborate architecture (Kahn 2010). *Marae* structure ScMo-15B is situated downslope of Structure 15H. This temple lacks an *ahu* but has a well-defined backrest stone and two appended shrines with rows of upright stones.

Other structures in the complex likewise suggest the elaborate nature of ScMo-15. As can be seen in Figure 2, three detached shrines, in addition to at least five rectangular houses, two large round-ended houses, several pavements, and other probable habitation terraces are situated between and below *marae* 15B and 15H (Table 2). On Shrine 15C, we recovered a *ti'i* or god figure fashioned from red tuff, a soft malleable stone. These small images have been described as 'fetchers', mediators between the world of the gods and the world of the living (Campbell 1991; Mu-Liepmann & Milledrogues 2008). Their common placement on shrines indicates active invocation and places of ritual performance. In addition, Green's original survey data suggests that at least two large round-ended houses were associated with the complex, including 15K, which likely served as an elite sleeping house, and 15L, which likely functioned as a specialized structure for assembly (Green 1996; Orliac 1982); these two structures have been impacted by modern development (see Figure 2). Round-ended houses used for public assembly are considered a material proxy for the presence of elites in prehistoric Ma'ohi society (Green 1996).

Thus, at the ScMo-15 Complex we find a concen-tration of ritual structures, house sites, some of an elaborate nature, and specialized structures. Such concentrations of one or more temple sites, in association with shrines and residential and specialized structures, have been described as aggregate site complexes (Kahn 2011). In the Society Islands, concentrations of temple sites, as are found in aggregate site complexes, are considered material equivalents

Table 2. Surface Features at the ScMo-15 Complex. Feature descriptions are after Kahn (unpublished field notes, 2002) and Green & Descantes (1989).

Feature #	Description	Type	Comments
15A	Curbstone outline	Rectangular House	Adjacent to 15B.
15B, W, O	Temple with paved court lacking an *ahu*. Backrest stone found on court. Simple enclosing wall construction. Two attached shrines.	*Marae*, Type IIIi with shrines	Destroyed by modern development since mapped and excavated in 2002 and 2004.
15C	Pavement with partial enclosing walls. Backrest stone, uprights, and *ti'i* figure on the central paving.	Shrine	Identified by Green as an isolated pavement. *Ti'i* figure on central paving has been worked to define the head and stomach. *Ti'i* does not sit flush on the ground (i.e. is of the type that has to be placed within a paving for support).
15D	Pavement and curbstone outline	Rectangular house	
15E	Raised platform		
15F	Curbstone outline	Rectangular House	
15G	Triangular shaped platform with numerous uprights along its midline	Shrine	Identified by Green as isolated pavement.
15H	Temple with paved court, detached *ahu*. Altar has cut and faced basalt and loaf-shaped stones	*Marae*, Type IIIc	
15I	Terrace with interior pavement, L-shaped wall, and partial curbstone outline	House terrace	Partially bulldozed at time of mapping in 2002.
15J	Curbstone outline	Rectangular house	Partially bulldozed at time of mapping in 2002.
15K	Terraces, curbstone outline	Agricultural-dryland; possible round-ended house	Curbstones have been robbed and/or disturbed, leaving precise site layout difficult to interpret even in Green's time.
15L	Curbstone outline, pavement	Round-ended house	Green et al. (1967:175) suggest that this is possibly a community house; note that site number is incorrectly referred to as 15J in the monograph text (Green et al. 1967) but is correctly noted as 15L on the Green and Descantes map (1989:150).
15M	Terrace	Residential flat	
15N	Pavement, terrace with alignment	Residential flat	
15O	Terrace, pavement, curbstones	Residential flat	
15P	Pavement, alignment, terrace	Residential flat	Large and elaborate.
15Q	Pavement		
15R	Stone alignment		
15S	Terrace	Agricultural- wetland	
15T	Boulder outcrop	Natural or referent structure	
15U	Terrace	Agricultural- dryland	
15V	Rectangular pavement with upright stone	Shrine	Identified by Green as a modified outcrop.
15W	Pavement		
15X	Pavement		
15Y	Terrace	Agricultural- dryland	
15Z	Pavement		
15Aa	Disturbed pavement, partial curbstone outline	Residential flat	Not mapped by Green.
15Ab	Curbstone outline	Rectangular house	Not mapped by Green.
15Ac	Two small alignments and curbstone outline; near the river of the lower part of the site	Rectangular house	Not mapped by Green.

of kin-congregations (Oliver 1974) where lineages proliferated and segmented through time. Thus, a comparison of the initial construction dates for *marae* ScMo-15H and ScMo-15B, which vary in both size and complexity, will refine our knowledge of site construction sequences and site contemporaneity within large, multi-structure and multi-*marae* complexes, which are ubiquitous throughout the 'Opunohu Valley and other windward Society Island contexts (Wallin 1993). Site construction sequences at ScMo-15 also have bearing on the segmentation and proliferation of kin-congregations and their relationship to broader socio-political transformations in the late prehistoric Society Island chiefdoms.

Results from the ScMo-15H Excavations

The ScMo-15H *marae* includes a simple enclosure and a detached *ahu* (Table 1, Figure 3); the latter is built with cut and faced basalt and loaf-shaped worked stones, an architectural style purported to date to the proto-historic period just prior to European contact.

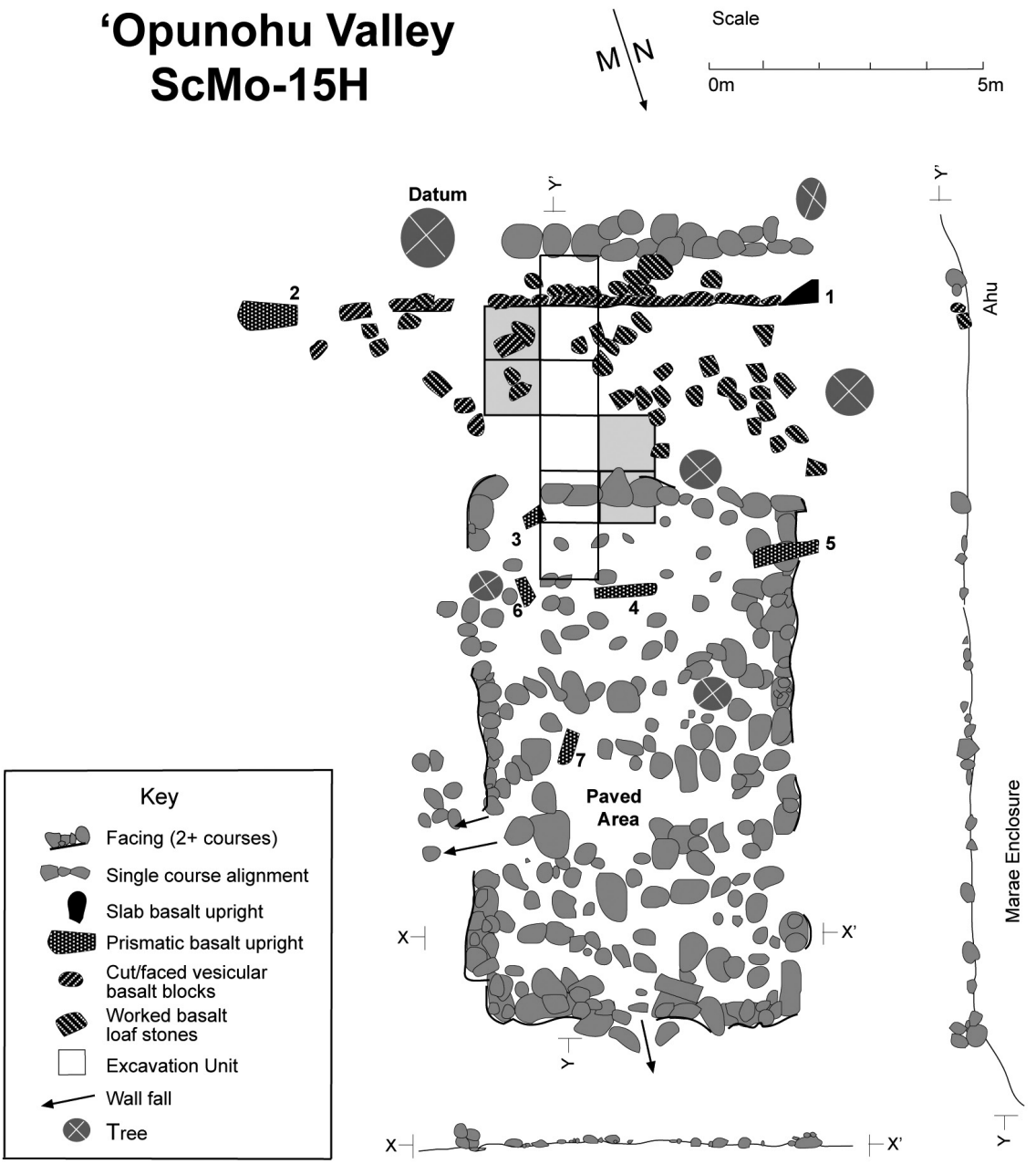

Figure 3. Plan View of ScMo-15H showing the trench excavated in 2004 (white fill) and additional units excavated in 2006 (grey fill). Numbers 1 and 2 mark the uprights at either end of the *ahu*.

Table 3. ScMo-15H stratigraphic descriptions.

Strata 1: Dark reddish brown (Munsell color 5YR 3/4). *Post-Occupational Humic Layer*. Silty loam. Composed of 10% decomposed leaves, penetrated by grass rootlets, and infrequent charcoal chunks. Sediment becomes more compact as boundary with Strata II is reached. Massive bedding, blocky, sub-angular, fine, non-sticky. Sharp, smooth sedimentological boundary with Strata II. Recent topsoil; interpreted as decomposing humic layer with some charcoal flecks redeposited from sheetwash by water, wind, and erosion from upslope.

Strata II: Dark yellowish brown (Munsell color 10YR 3/6). *Cultural Deposit 1– associated with use of the marae*. Moderately compact silty clay. Moderate concentrations of charcoal flecks and chunks (2%), isolated sub-angular vesicular basalt (5-10 cm range), and infrequent water-worn pebbles (*'iri 'iri*). Charcoal flecking throughout, but increases c. 9-10 cmbs (or 4-5 cm into this layer). Charcoal flecks and vesicular basalt remain frequent at the interface with Strata III. Massive bedding, unsorted, oriented parallel to Strata III. Slightly sticky texture. Basal boundary is wavy, sharp, 2-5 cm thick. Interpreted as the main cultural deposit associated with use of the *marae*.

Strata III: Dark brown (Munsell color 7.5 YR 3/2). *Cultural Deposit 2– earthen construction fill to create foundation for the ahu*. Moderately compact silty clay with frequent inclusions (patches of Strata V clay, degrading scoria, and infrequent charcoal). Transition with Strata IV is diffuse and amorphous (5 cm boundary). Represents a mixed deposit, with mottled patches of Strata II and Strata V. Sediment color change increases with increasing depth.

Strata IV: Dark reddish brown (Munsell color 5 YR 3/4). *Cultural Deposit 3– earthen construction fill for initial leveling of the ridge, and for initial construction of the foundation for the simple marae enclosure*. Dry silty clay with rare charcoal flecks (.5 cm), rare sub-rounded degrading scoria, and small pockets of yellow/orange clay (1-2 cm to 3-5 cm). Moderately sorted, un-oriented, massive bedding. Basal boundary with Strata V is anthropogenic, wavy and sharp (2-5 mm) with a distinct contrast, inclined, slightly south to north.

Strata V: Strong brown to yellowish red (Munsell color 5YR 4/6 to 7.5 YR 4/6). *Natural Sterile Clay- original ground surface upon which site use (associated with house alignment) commenced*. Very compact silty clay. Massive bedding, unsorted, unrelated. Frequent sub-rounded to rounded degrading scoria that increase in size with increasing depth (from fist size to boulders). Sterile, lacks charcoal or any cultural contents.

An examination of the surface remains suggested that the simple enclosure may have predated the *ahu* construction. During the 2004 field season a 1m x 6m trench was opened between the detached *ahu* and the *marae* enclosure to understand the sequence of site construction (Kahn 2005b, 2005c; Figure 3). At least four episodes of site use were indicated by site stratigraphy (Kahn 2005b, 2005c; Table 3). The first (Construction Event 1, associated with Stratigraphic Deposits IV, V) involved the construction and use of a single course alignment. This feature possibly served as a portion of a simple curbstone outline for a house built directly on the surface of the sterile basal deposit. Construction Event 2 (associated with Strata IV) was related to the construction of the simple *marae* enclosure (e.g., the paved enclosure with uprights). The third period of site use (Construction Event 3, associated with Strata III) saw the construction of the detached *ahu* with worked stones. Strata II is interpreted as the main cultural deposit associated with the final use of the *marae*. Table 4 describes the posthole and combustion features located in the 2004 excavations (Features 1-4).

Additional excavations at ScMo-15H were required to determine if the single course alignment, situated stratigraphically within the earliest deposits pre-dating the construction of the *marae*, corresponded to a portion of a simple curbstone outline for a house (Kahn 2005c). In 2006, four additional 1m x 1m test units were excavated to the east and west of the original trench (Figure 3) to determine if this feature was larger than the area exposed in 2004 and if it was a portion of a round-ended house. While the stone alignment did not continue into adjacent units excavated in 2006, a large posthole (Feature 12) was exposed (Table 4), providing further evidence for activities carried out at this site prior to the construction of the *marae*. A substantial posthole cut from Strata IV into Strata V, Feature 12 was found at the same surface occupation as the single course alignment found in the 2004 excavations in unit N103 E100. The posthole was found c. 1.5m to the north of the single course alignment situated in unit N105 E99. Further excavations are required to determine both the extent and nature of these activities; current evidence suggests a residential function pre-dating the construction of the *marae*.

Several other sub-surface features were recovered in the 2006 excavations (Table 4, Features 5-12). Features 5-11 were cut from Strata II into Strata IV, and thus are associated with the final use of the *ahu*/*marae* enclosure. Posthole Features 2-7 were found in close proximity to the *ahu*. These data suggest that posthole Features 2-7 are the material remains of the emplacement of *unu* – elongate wooden boards which were elaborately carved and put up in *marae*, often along the face of the *ahu* (Babadzan 1989:41; Eddowes 1991:73-84).

Table 4. Excavated sub-surface features, ScMo-15H.

Feature #	Type	Location and Context	Depth Below Surface (cm)	Dimensions (cm)	Description
1	Posthole	N100 E100, interface of Strata IV, V	27	12 x 15 x 7	Small oval posthole, steep sides, flat bottom. Interior fill is loose, non-compact Strata IV sediment and small charcoal flecks.
2	Posthole	N101 E100, cut from bottom Strata IV into Strata V	26	20 x 15 x 6.5	Shallow, oval posthole, steeply sloping sides and flat bottom. Interior fill is loose Strata IV sediment with frequent charcoal flecks.
3	Posthole	N101 E100, cut from bottom of Strata IV into Strata V	23.5	18 x 10 x 10	Round posthole, gently sloping sides and flat bottom. Interior fill is Strata IV soil with frequent charcoal flecks.
4	Combustion feature	N106-107 E 100, Strata IV	27	32 x 6 x 5	Small combustion feature. Shallow scoop shape, bisected in trench profile. A thin 2-3 cm layer of red oxidized soil sits above a 1-2 cm black lens of concentrated charcoal.
5	Ash dump? Amorphous burn feature?	N102 E101	72-78	54 x 36	Minimal dimension, feature not fully excavated. Shallow, with Strata II interior fill, frequent charcoal chunks, greater than average fire-cracked rock, and patches of oxidized burnt soil. Amorphous in-situ burn or ash dump.
6a	Posthole	N103 E101	101.5-119	13 x 14	Adjacent to 6b. Small, round posthole, steeply sloping sides. Some charcoal flecking at upper limit. Single vesicular basalt cobble wedged into the side as a support stone. Cut into Strata IV.
6b	Posthole	N103 E101	102-121	14 x 16	Adjacent to 6a. Small round posthole, steep sides, flat bottom. Charcoal flecking at upper limit. Cut into Strata IV.
7a	Double posthole (with 7b)	E102 N101	83-105	17 x 14	Medium to small but deep posthole within 7b. Straight sided. Pre-dates 7b. Cut into Strata IV.
7b	Double posthole (with 7a)	E102 N101	87-109	24 x 38	Large round posthole. Top is clearly demarcated with Strata II soil and thin lens of Strata V forming a postmold. Steep sided, flat bottom. Cut into Strata IV. Post-dates 7a.
8a	Double posthole (with 8b)	E102 N101	96-118	20 x 11	Minimal dimension; feature was not fully excavated. Medium sized oval posthole. Darker, less compact Strata II soil in feature fill but lacks extensive charcoal. Cut into Strata IV.
8b	Double posthole (with 8a)	E102 N101	96.5-102	7 x 15	Minimal dimension, feature was not fully excavated. Small, round posthole, non-compact Strata II soil in posthole interior lacking charcoal. Cut into Strata IV.
8c	Posthole	E102 N101	97-102	27 x 15	Large, flat bottomed posthole. Steeply sloping sides. Small charcoal flecks in interior. Cut into Strata IV.
8d	Posthole	E102 N101	98-108	17 x 14	Medium to small oval posthole with steeply sloping sides, flat bottom. Cut into Strata IV.
9	Posthole	N103 E101	114.5-NR	14 x 13	Small, round posthole. Cut into Strata IV.
10	Posthole	N103 E101	115-NR	13 x 12	Small, oval posthole. Cut into Strata IV.
11	Posthole	N103 E101	119.5-NR	12 x 10	Small, oval posthole. Cut into Strata IV.
12	Posthole	N105 E99	116-126	48 x 48	Large round posthole, same occupation surface as rock alignment in N 104 E 100. Cut into Strata V. Strata IV soil in interior with frequent charcoal chunks. Straight sides, flat bottom. Missed at least top 10 cm of feature.

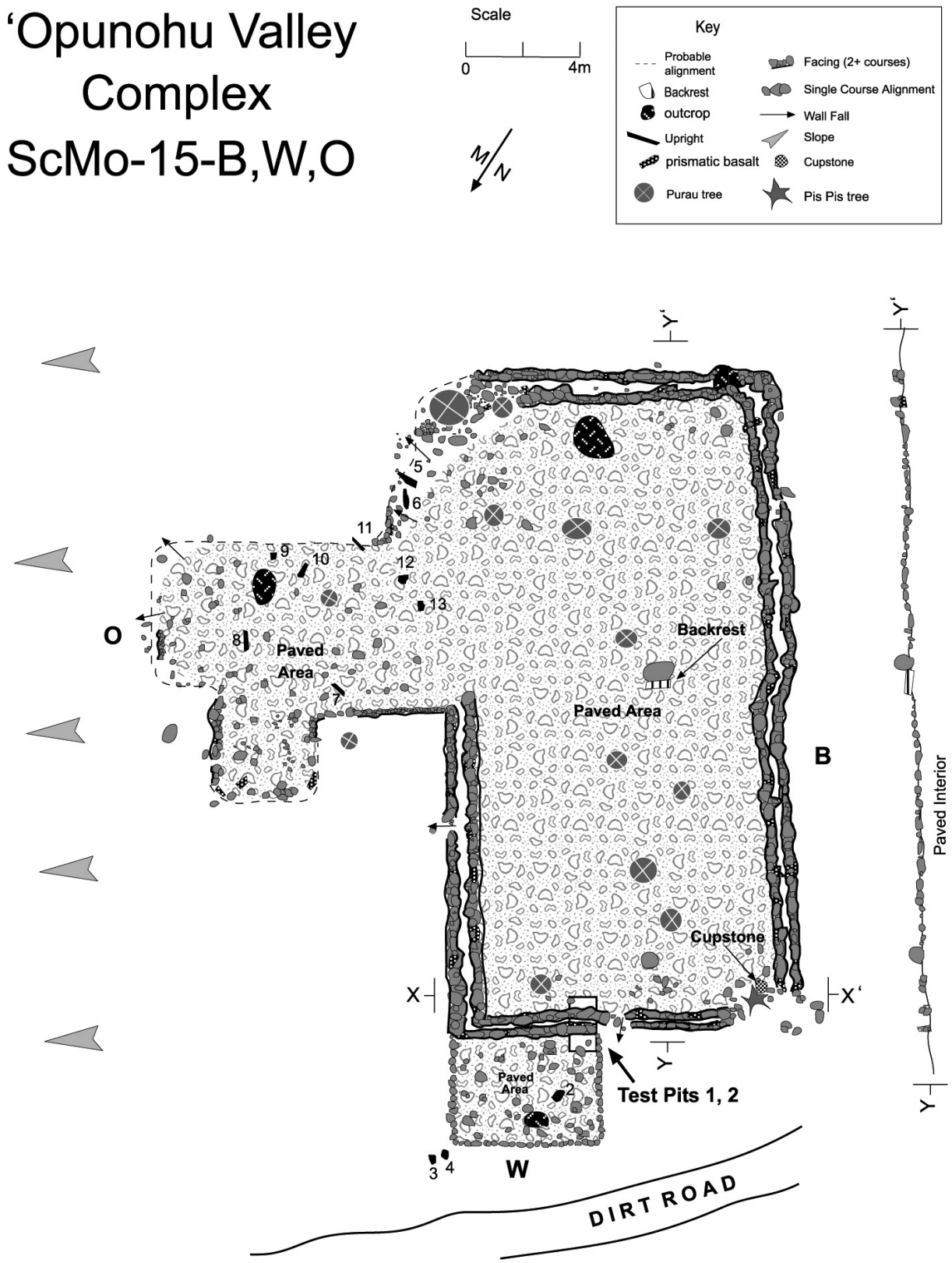

Figure 4. Plan view of ScMo-15-B-W-O showing test pits excavated in 2006.

Table 5. Radiocarbon determinations for the dated ScMo-15 structures.

Lab No.	Site	Provenience	Conventional ^{14}C Age Years B.P.	$\delta^{13}C$ °/oo	Calibrated Age at 1 σ	Calibrated Age at 2 σ
OZJ-698	ScMo-15H	Layer 4, Feature 4, scoop hearth. N 106.89 E 100.00 27 cmbs. Dates construction of the initial *marae* platform.	385 ± 50	-25.2	AD 1445–1522 (47.2%) AD 1575–1583 (3.2%) AD 1591–1623 (17.1%)	AD 1438–1635 (95.4%)
OZJ-701	ScMo-15H	Layer B1, N102.06 E100.70 56 cmbd, 2 cm below base of *ahu* stones, dates construction of the *ahu*.	150 ± 40	-26.3	AD 1669–1697 (11.6%) AD 1726–1780 (24.4%) AD 1798–1814 (7%) AD 1836–1845 (3.4%) AD 1851–1877 (9.7%) AD 1917–1945 (12.1%)	AD 1665–1785 (46%) AD 1795–1893 (32.6%) AD 1906–1952 (16.9%)
OZJ-699	ScMo-15B	Dates Feature 1, TP1, object 47. Earth oven cut into Layer B construction fill deposits 40 cm below the north enclosing wall of the *marae*. Dates the initial construction of the *marae* enclosure.	410 ± 45	-21.7	AD 1436–1512 (58.7%) AD 1600–1616 (9.5%)	AD 1423–1526 (68.6%) AD 1555–1633 (26.8%)
OZJ-700	ScMo-15B	Obj, 4, TP1, Layer B1, N0.29 E0.89 44 cmbd. Isolated charcoal recovered under paving stone #9. Dates *marae* enclosure paving episode/final use.	125 ± 50	-25.5	AD 1683–1712 (12.2%) AD 1716–1736 (8.3%) AD 1804–1890 (36.8%) AD 1909–1935 (11.0%)	AD 1669–1780 (39.0%) AD 1798–1944 (56.4%)

Radiocarbon Dating Results – ScMo-15H

Two charcoal samples from ScMo-15H were submitted to the Australian Institute of Nuclear Science and Engineering (AINSE) facility for AMS dating (Kahn 2011). OZJ-698 dates a charcoal sample taken from Feature 4, a small scoop hearth associated with Strata IV, the construction fill deposit for the *marae* enclosure (see Tables 4, 5, and 6). This sample was located 27 cm below the surface paving of the *marae* enclosure and dates activities associated with the initial construction of the enclosure. The sample produced a calibrated age range of AD 1438–1635 at 2 sigma; the 1 sigma calibrations suggest that the sample most likely dates to AD 1445–1522. The OZJ-701 wood charcoal was removed from 2cm below the base of the detached *ahu* and dates the construction of the *ahu*. The sample produced a calibrated age range with multiple intercepts at 2 sigma; the calibrated age ranges suggest that the sample most likely dates somewhere between AD 1665–1785. Thus, consistent with expectations from the site stratigraphy, the AMS dates for ScMo-15H confirm that the simple *marae* enclosure was constructed before the detached *ahu*, sometime during the mid-15th to early 17th centuries, while the *ahu* with worked stones was constructed sometime later, during the mid-17th to late 18th centuries. While the initial use of the site, likely associated with residential activities, has yet to be dated using radiometric techniques, stratigraphic evidence supports that this period of site use predates the mid-15th century.

Results from the ScMo-15B Excavations

ScMo-15B lacks an *ahu* but includes a well-paved interior court with two uprights and a backrest stone (Table 1, Figure 4). This Type IIIi *marae* has walls composed of parallel rows of un-worked prismatic basalt boulders and cobbles, about 30cm high and 1m wide. The space between the parallel wall alignments has earthen fill. This type of wall construction is found at other temples in the valley and may represent an 'early' form of *marae* wall construction (see Green et al. 1967).

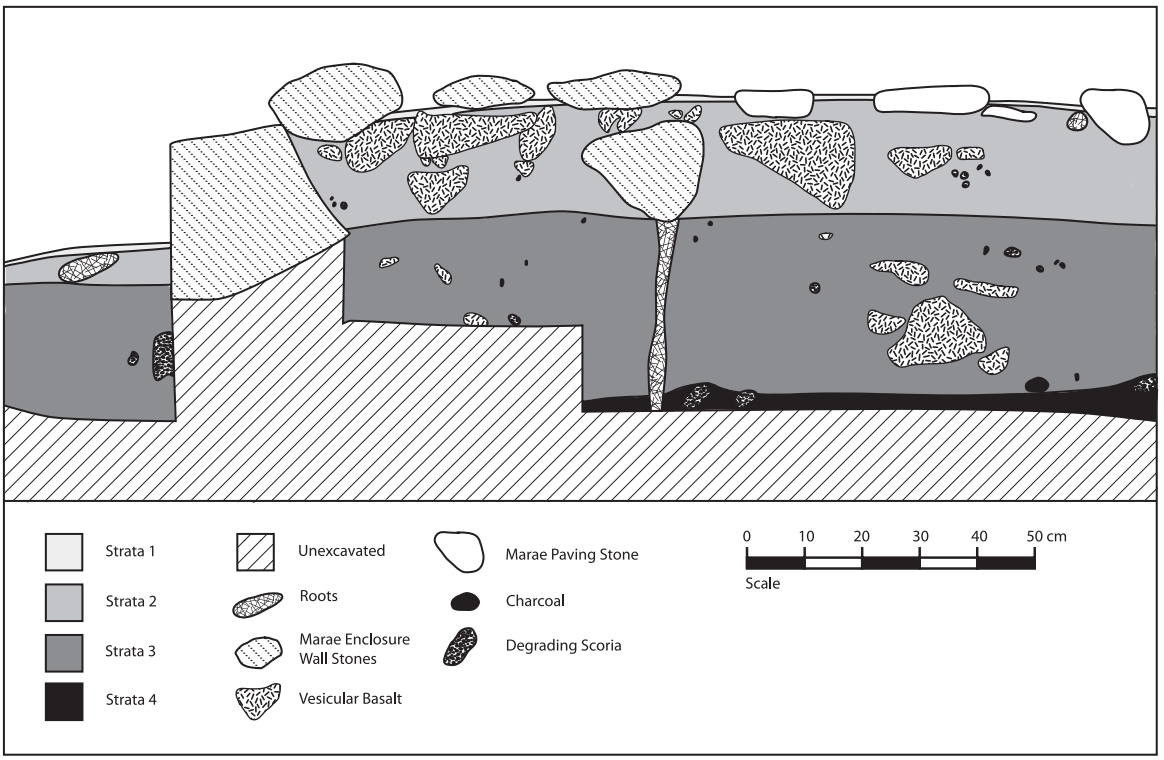

Figure 5. ScMo-15B, East wall profile, Test Pits 1, 2.

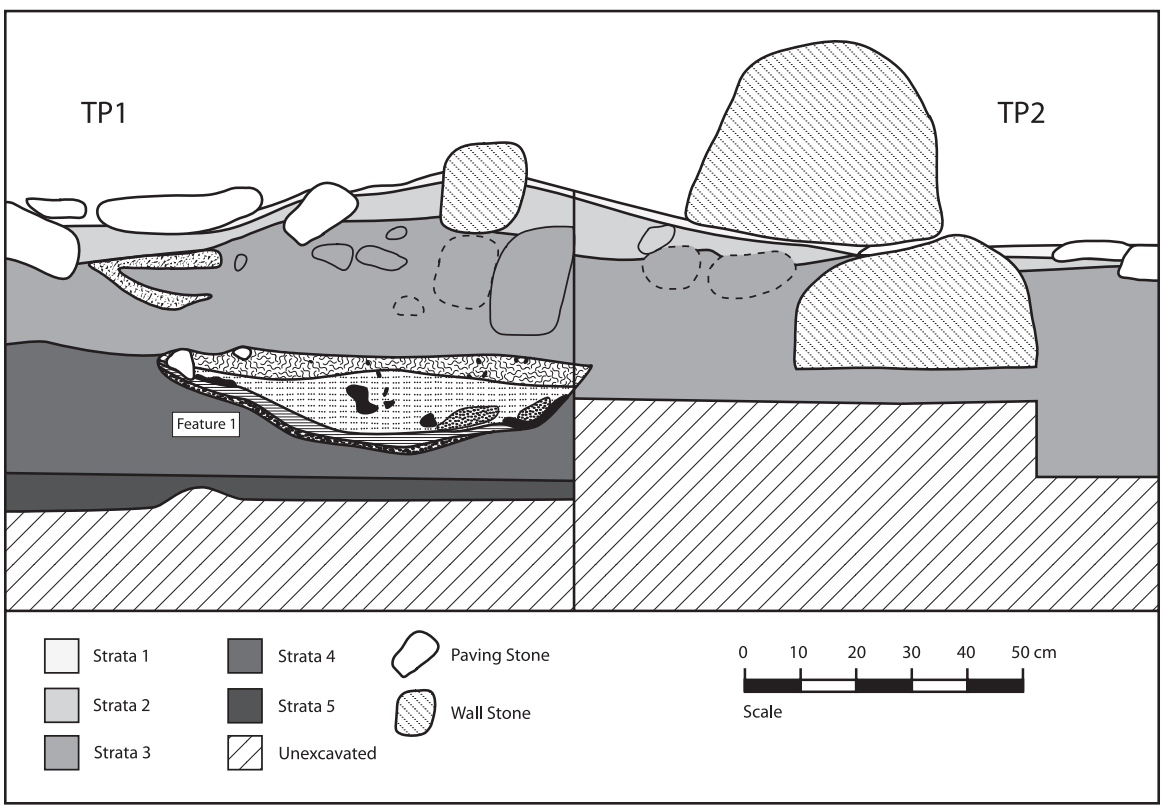

Figure 6. ScMo-15B, Feature 1 after excavation. Note its placement underneath the northern enclosure wall of the *marae* (elongated surface stone is southern face of the *marae* wall).

Table 6. ScMo-15B stratigraphic descriptions.

Strata 1: Dark brown (7.5YR 3/3/2). *Post-Occupational Humic Layer*. Silty loam. Granular, loose, non-sticky, non-plastic with abundant rootlets and high organic content. 1-2 cm thick. Boundary to cultural deposit gradual and smooth.

Strata II: Dark brown (7.5YR 3/3/3). *Cultural Deposit 1– associated with final use of the marae*. Moderately compact silty clay. Infrequent charcoal (1%). Bottom of paving stones based in Strata II, which was used as fill for the interior *marae* enclosure and is also the final cultural deposit associated with the last use of the *marae*.

Strata III: Brown (7.5YR 4/4/2). *Cultural Deposit 2– earthen and rubble construction fill- upper*. Silty clay. Mixed deposit with patches of Strata III clay, moderate frequency of charcoal chunks, vesicular basalt cobbles and boulders, and fire-cracked rock. Infrequent degrading scoria and vesicular basalt in 2-3 cm range and rubble in the 50 cm range. Base of north face of ScMo-15B *marae* wall stones are in this layer.

Strata IV: Brown (7.5YR 4/4/4). *Cultural Deposit 3– earthen and rubble construction fill- lower*. Silty clay. Strata III deposits with increased clay content and increased rubble content. The amount of clay inclusions and the size of the rubble fill increases as depth increases.

Strata V: Strong brown (5YR 4/6). *Natural Sterile Clay*. Very compact silty clay. Original ground surface upon which *marae* construction commenced. Massive bedding, unsorted, unrelated, platy structure. Frequent sub-rounded to rounded degrading scoria. Frequent degrading scoria, increase to cobble size at ending depths. Sterile.

Table 7. ScMo-15B sub-surface features.

Feature #	Type	Location and Context	Depth Below Surface (cm)	Dimensions (cm)	Description
1	Earth oven	TP1	64-82	52 x 74	Minimal dimensions; feature bisects wall and was not completely excavated. Oval shape. Fill has concentrated charcoal, high ash content, fire-cracked rock, and *ahi ma'a* stones (the latter are concentrated 2-3 cm into feature fill). Top layer has charcoal, sediment, and vesicular basalt oven stones. This overlays a thin layer of ash, which overlays a thin layer of red oxidized soil. Cut into Strata III construction fill deposits, c. 40 cm below north wall of *marae*. Basal limit of feature is 6 cm above the top of Strata IV (the sterile clay deposit).
2	In-situ burn feature, small earth oven?	TP1	52-76	19 x 20	Unexcavated, found in south wall profile of TP 1. Cut into Strata III construction fill deposit. Only the edge of feature is exposed. In-situ burn feature with concentration of charcoal chunks, ash, vesicular basalt rock, fire-cracked rock. Contents suggest the exposed feature is an earth oven. Top depth is ca. 10 cm below paving stone base.

Two paved shrines are attached to the *marae* enclosure. The first, Structure W, is a small rectangular shrine appended to the NE end of the *marae* structure. The interior is well-paved with vesicular basalt cobbles. A single upright (object 2 in Figure 4) is located in the NE corner of the shrine. Uprights number 3 and 4 are located just outside of the NE corner of the shrine. The second paved shrine, Structure O, is appended to the eastern wall near the SE corner of the *marae*. This shrine is rather disturbed, but intact areas demonstrate that the walls were stacked two courses high. This large rectangular shrine has a notch at the northern end and the interior is well-paved. Seven uprights are found on Shrine O and they appear to be situated in parallel rows.

Two test pits, TP 1 and TP 2, were excavated; these were situated to bisect the north wall of the *marae* where Shrine W was appended (Figure 4). The units were placed to bisect both the northern wall of the *marae* enclosure as well as the pavement of Shrine W.

The excavations documented that the paving stones in both the *marae* enclosure and shrine were based in Strata II (Figure 5; Table 6). Charcoal sample OZJ-700, taken from the base of a paving stone in TP1 was submitted to AINSE to date the construction of the *marae* paving, presumably synonymous with the final use of the *marae*. Rubble fill begins just below the base of the paving stones in the *marae* enclosure interior. The excavations revealed that the interior of the *marae* wall starts primarily as rubble fill and then shifts to a rubble and earthen fill. Foundation stones at the end of Strata III were found beneath the northern *marae* enclosure wall; this formed a stable foundation for the construction/placement of the wall.

Two earth ovens were exposed in the excavations. Feature 1, a large earth oven, partially bisects the west wall of TP 1. This feature is clearly based in the lower half of the Strata III construction fill deposit (Figures 6 and 7, Table 7). The top of Feature 1 is situated 4cm below the foundation stones used to support the northern enclosure wall for the *marae*. Charred *Aleurites moluccana* endocarp fragments from this feature (OZJ-699) were submitted for radiocarbon dating to provide a secure date for the construction of the *marae* enclosure. Feature 2 is an in-situ burn feature that was minimally exposed in the south wall profile of TP 1 (Table 6). The high concentration of charcoal, and its association with ash and fire-cracked rock, suggest that Feature 2 is also an earth oven. Feature 2 is situated in the upper half of Strata III construction fill deposits, similar to the context of Feature 1. Both earth ovens were situated within the construction fill of the temple enclosure, and directly beneath the foundation stones for the *marae*. Their context suggests the remains of feasting activities which took place during the construction of the temple. Indeed, similar patterns of earth ovens being situated within the construction fill and/or below the walls of of temple sites have been found at other ceremonial complexes in the 'Opunohu Valley (Kahn 2011) and on Tahiti (Garanger 1980). These features likely represent dedicatory ovens where feast foods were cooked for communal celebrations marking temple completion and ritual 'opening' of the sites (Kahn 2011; see also Eddowes 1991:187).

Figure 7. Photo of ScMo-15B, Feature 1 after excavation. Note placement of Feature 1 in the construction fill of the *marae* enclosure, underneath stones found in retaining wall for the stone enclosure (two stones at right side of photo).

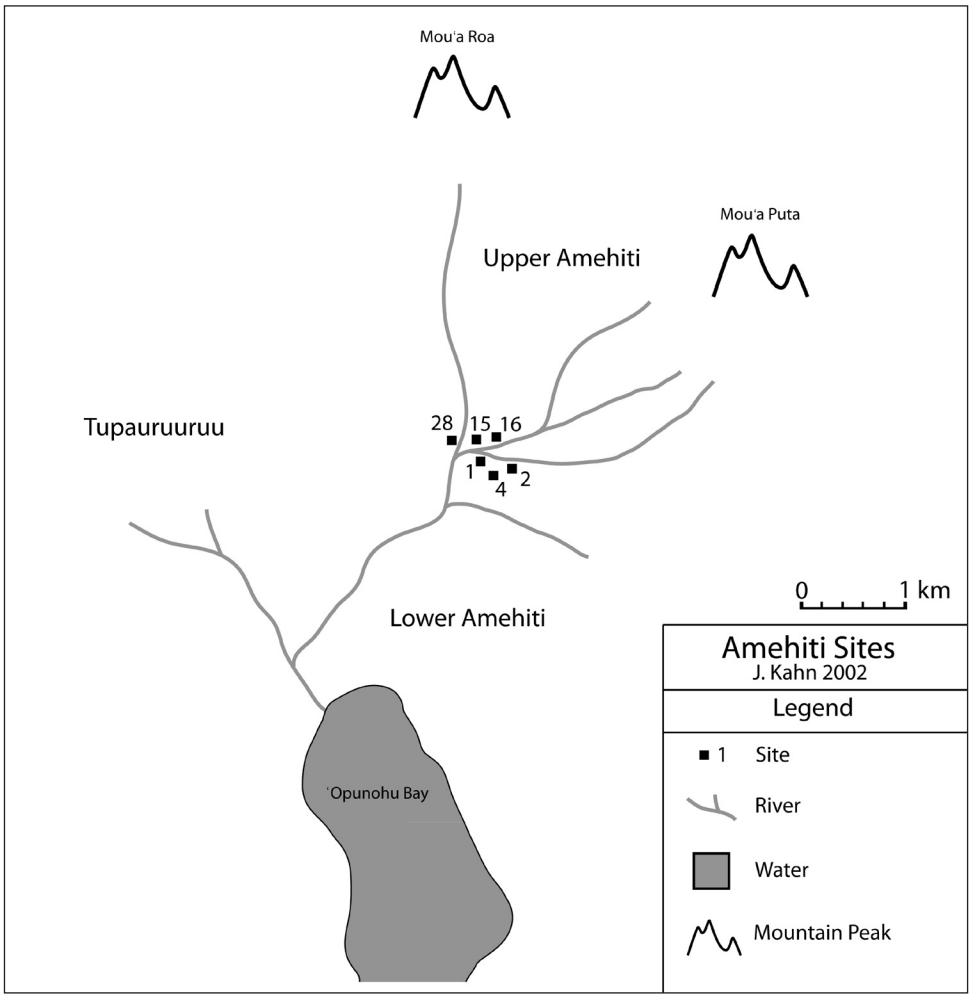

Figure 8. Schematic view of significant sites found in lower Amehiti.

Radiocarbon Dating Results – ScMo-15B

OZJ-699 dates Feature 1, an earth oven cut into the construction fill of the *marae*, c. 40cm below the north enclosing wall of the *marae*. Based on stratigraphic evidence, the sample dates the initial construction of the *marae* enclosure. The dated carbonized *Aleurites moluccana* endocarp fragment yielded a calibrated date between the early 15th-early 16th centuries (Kahn 2011). OZJ-700, wood charcoal recovered just under the *marae* pavement, yielded a calibrated date with multiple intercepts at both 1 and 2 sigma (see Table 5). The sample most likely dates to sometime during the 19th century, indicating that the final episode of *marae* construction (the placement of the interior paving) and/or use was after European contact. Thus, similar to ScMo-15B, the dated construction events at ScMo-15H indicate that there were more than one *marae* construction and use events, and these events spanned at least three centuries.

Summary

If present typologies are to be contextualized within chronological models that incorporate *marae* reconstruction events, additional excavations are needed at temple sites throughout the Society Island archipelago. For example, the ScMo-15H excavations described here demonstrate that this detached *ahu* with worked loaf stones was added to a simple *marae* court that had been constructed several centuries earlier. This problematizes chronological models based on *marae* surface architecture alone. Such models must be used cautiously and tested through data derived from archaeological excavation, given that temples in aggregate complexes can have multiple construction events spanning several centuries in time.

A comparison of the radiocarbon dates for *marae* ScMo-15H and ScMo-15B indicates that both structures in this large site complex were first constructed as simple *marae* enclosures lacking *ahu*

sometime during the early 15th -early 16th centuries. These *marae* were then used for the next several centuries and both were elaborated in the 19th century, although in different manners. At ScMo-15H, the final episode of *marae* construction involved the addition of a detached *ahu* with worked loaf stones; at ScMo-15B the final episode of *marae* use was associated with the paving of the interior court. As such, the ScMo-15 data support other evidence from ‘Opunohu Valley aggregate *marae* complexes indicating that such complexes represent palimpsests of centuries of growth and development, whereby different structures were constructed while others were elaborated through time (Kahn 2011). Similar to other aggregate centers, ScMo-15 became a focus for residential and ritual activity in the early 15-16th centuries, a period of major inland expansion. The final phases of site elaboration were completed in the 100 years prior to European contact when the ‘Opunohu Valley was split into two socio-districts (Tupauruuru and Amehiti) (Henry 1928:92; see also Handy 1930:79–80). I argue that the *marae* remodeling events that are common during this later period are material manifestations of shifts in socio-political relations among competing elite groups in the valley.

Conclusions

As mentioned at the outset of the article, most settlement pattern models for the ‘Opunohu Valley have remarked upon the lack of well-defined elite complexes in the Amehiti sector. As I have argued, the ScMo-15 Complex, as well as several other sites situated on the lower Amehiti flat, problematize this notion and suggest there was an early influx of high-status individuals into the lower Amehiti sector. While sites in the upper reaches of Amehiti have some evidence for high-status individuals (most notably the *ario‘i*, members of an elite fertility group), the majority of sites at upper elevations appear related to lineages of low (commoner) to moderate status (Kahn & Kirch 2013). Thus, there is some local variation within settlement patterns in different elevations and ecological contexts of the Amehiti District, as well as variation between the districts of Amehiti and Tupauruuru.

Numerous lines of evidence point towards the sacred nature of the ScMo-15 Complex, including the high frequency of shrines, temples, and specialized sites. The temple construction deposits illustrate that ritualized activities accompanied *marae* construction, namely feasting and ‘opening events’. Ethnohistoric accounts document how temples, especially those of the community rank or higher, were considered *ra‘a* or sacred and as such they were considered *tapu*, restricted places set aside for ritual activities rather than daily use. The very act of constructing a temple was sacred and thus, was bound by sets of rules and practices. Henry (1928:131-32) describes how when constructing a national *marae*, workers were housed in isolated encampments and the local populace was not allowed to approach the site. Once the stones for the walls of the *marae* were collected, priests sprinkled water on the ground while chanting a consecration prayer. This reference provides glimpses into some of the ritual performance activities surrounding the construction of sacred sites, similar to the data provided by the ScMo-15 archaeological excavations.

In looking at the ScMo-15 Complex within the broader landscape of lower Amehiti, one can see that the complex is surrounded by several other significant sites that are found at the confluence of two major branches of a river (see Figure 8). These include ScMo-1, a substantial site comprised of numerous elaborate terraces and pavements. Its large size, elaborate nature, and unique elements such as ramped entryways, suggests that the complex may have had a community-level performative function, perhaps for tribute or ritual offerings. Just across the river lies ScMo-2, the only *marae* in Amehiti with an *ahu* constructed from cut and faced coral blocks. ScMo-2 is associated with a number of elaborate enclosures and a rectangular house. To the NE of ScMo-15, an elaborate house platform, ScMo-16, is found. This site includes an elaborate, well-paved terrace that likely served as a house platform, in addition to several smaller structures on a living flat, some of which are associated with stone uprights. Stone uprights incorporated into residential platforms and pavements are indicative of elite house rank or specialized-use sites (Kahn 2005). Finally, ScMo-28, the only other temple site in Amehiti that has loaf-shaped stones incorporated into its architecture (Kahn 2010), is found in the nearby vicinity.

Thus, a broader landscape view confirms that ScMo-15 is not the only site of some status found in the lower reaches of Amehiti sector; this aggregate complex is encircled by other elaborate site types of varying function. Few of these other sites have been excavated, but surface remains tentatively suggest they functioned as high status residences, ritual areas, and areas for communal presentations and/or the offering of tribute. Green excavated several structures associated with ScMo-4, notably Structure A, a large round-ended house, and Structure B, a rectangular house (Green et al. 1967). Both sites had at least two periods of occupation, with round-ended House A being enlarged and elaborated in its final period of use. Structure A in both its iterations has been interpreted as an elite residence (Green 1996; Orliac 1982:277), with Structure B perhaps serving as a structure for spectators of dance (Orliac 1982:150-152, 283). Based

on a radiocarbon sample dated from an earth oven context, Green argued that the earliest use of this house site dated to the 13th century (Green et al. 1967), but one must caution that this sample was not identified to species and could have some in-built age.

In closing, while the Amehiti District on the whole does not appear to have many high status complexes, particularly in its upper reaches, the story is somewhat different in the lower elevations. There, elaborate temple sites and residences are found, suggesting that elite families moved into the most productive agricultural lands near the valley bottom and adjacent to running water early on in the inland expansion sequence (Kahn & Kirch 2013). These data remind us of the dangers of utilizing dichotomies such as elite versus commoner when interpreting relatively coarse-grained data from settlement pattern surveys. This notion is in accordance with current archaeological analyses of status roles which have moved away from simple dichotomies that can mask social identities (Casella & Fowler 2005; Voss 2005) to highlight variability found both within and among classes and how class is socially negotiated in a dynamic fashion (Dobres & Robb; Levine 2011). With a larger survey and excavation sample, and the benefit of precise chronometric dating, a more complex picture of social status and settlement emerges in the ‘Opunohu Valley, with Amehiti perhaps representing a zone of moderate status elites managing a substantial workforce of commoner laborers in a highly sustainable agricultural zone. The ScMo-15 Aggregate Complex, and perhaps nearby temple sites such as ScMo-2 and ScMo-28B, likely represent socio-political centers where high status lineage leaders carried out rituals in concert with specialized priests, and funneled up commoner tribute during annual ritual ceremonies, similar to patterns found at aggregate complexes in Tupauruuru (Kahn 2011; Kahn & Kirch 2013).

Acknowledgments

Roger Green was a constant source of encouragement and is thanked for his deep support for my ‘Opunohu Valley research. Special thanks also go out to Gré Tahiata, then Director, Domaine d’Opunohu, who long served as an important advocate for the natural and cultural resources of the ‘Opunohu Valley, and who first directed me to the lower Amehiti sector, as he was aware of plans for its eventual development. Funds from the Roger Green Foundation allowed for a re-survey of the Amehiti sector of the valley, which I carried out in 2002 with the aid of field assistants Deia Nickelsen and Brenda Hamilton. The following individuals assisted me or facilitated my 2004 research: Teddy Tehei, le Chef de Service, Service de la Culture et du Patrimoine, Government of French Polynesia, Marimari Kellum, Mo‘orea; and Neil Davies, Director, Gump Research Station. Teiva Tamati, Bonhomme Tututavau, Hiro Teihotaata and Marius Teihotaata are thanked for their assistance in the field, as well as Erika Radewagen and my 2004 field school students. Permission required for conducting excavations in the ‘Opunohu Valley was obtained from Teddy Tehei, le Chef de Service, Service de la Culture et du Patrimoine, Government of French Polynesia, and Priscille Frogier, le Chef de Service, Délégation à la Recherche, Government of French Polynesia. Tamara Maric greatly facilitated the permit granting process. The 2008 excavations were funded by a Post-Doctoral Research grant awarded by the School of Social Science, University of Queensland. AINSE award AINGRA07079 provided funds for the AMS radiocarbon dating.

Note

1. Shrines are smaller, less elaborate ritual spaces which include a pavement with uprights, backrest stone, and oftentimes god figures. These spaces, like *marae*, were areas where prayers and offerings were performed to the gods and the deceased ancestors.

References

Babadzan, A. 1989. La religion Traditionnelle à Tahiti et Aux Iles de la Société à L’Époque de la Découverte. Unpublished thesis, Université de Paris X.

Campbell, B. 1991. Stone Ti‘i of the Society Islands. Unpublished M.A. thesis, University of Auckland.

Carballo, D.M. 2012. Public Ritual and Urbanization in Central Mexico: Temple and Plaza Offerings from La Laguna, Tlaxcala. *Cambridge Archaeological Journal* 22(3):329-352.

Casella, E.C & C. Fowler. 2005. Beyond Identification: An Introduction. In *The Archaeology of Plural and Changing Identities: An Introduction*. E.C. Casella & C. Fowler (eds.):1-8. New York: Plenum Press.

Demarrais, E., L.J. Castillo & T. Earle. 1996. Ideology, Materialization, and Power Strategies. *Current Anthropology* 37(1):15-31.

Dobres, M.A. & J.E. Robb. 2000. Agency in Archaeology: Paradigm or Platitude? In *Agency in Archaeology*. M.A. Dobres & J.E. Robb (eds.):3-18. New York: Routledge Press.

Eddowes, M.D. 1991. Ethnohistorical Perspectives on the Marae of the Society Islands: The Sociology of Use. Unpublished MA thesis, University of Auckland.

Emory, K.P. 1933. Stone Remains in the Society Islands. *Bernice P. Bishop Museum Bulletin 116*. Honolulu: Bishop Museum Press.

Friedel, D.A. 1992. The Trees of Life: *Ahau* as Idea and Artifact in Classic Lowland Maya Civilization. In *Ideology and Pre-Columbian Civilizations*. A.A. Demarest & G.W. Conrad (eds.):115-133. Santa Fe: School of American Research Press.

Garanger, J. 1980. Prospections archéologiques de l’îlot Fenuaino et des vallées Aiurua et Vaiote à Tahiti. *Journal de la Societe des Oceanistes* 66-67(XXXVI):77-104.

Green, R.C. 1961. Moorean Archaeology: a preliminary report. *Man* 61:169-173.

——1996. Settlement Patterns and Complex Society in the Windward Society Islands. In *Mémoire de Pierre, Mémoire d'Homme*: *Tradition et Archéologie en Océanie, Hommage a Jose Garanger*. M. Julien, M. Orliac & C. Orliac (eds.):207-227. Collection "Homme et Société 23", Paris: Publications de la Sorbonne.

Green, R. & C. Descantes. 1989. *Site Records of the 'Opunohu Valley, Mo'orea*. Limited Edition. Auckland: The Green Foundation for Polynesian Research.

Green, R.C. & K. Green. 1968. Religious Structures (Marae) of the Windward Society Islands: The Significance of Certain Historical Records. *New Zealand Journal of History* 2:68-89.

Green, R.C., K. Green, R.A. Rappaport, A. Rappaport & J.M. Davidson. 1967. Archaeology of the Island of Mo'orea, French Polynesia. *Anthropological Papers of the American Museum of Natural History* 51(2).

Handy, E.S.C. 1930. History and Culture in the Society Islands. *Bernice P. Bishop Museum Occasional Papers* 79. Honolulu: Bishop Museum Press.

Henry, T. 1928. Ancient Tahiti. *Bernice P. Bishop Museum Bulletin* 48. Honolulu: Bishop Museum Press.

Kahn, J.G. 2002. *Annual Report of Archaeological Research Activities Carried out in the 'Opunohu Valley, Mo'orea, July 7- August 30, 2002*. Ministry of Culture, Territorial Government, French Polynesia.

——2003. *Maohi* Social Organization at the Micro-Scale: Household Archaeology in the 'Opunohu Valley, Mo'orea, Society Islands (French Polynesia). In *Pacific Archaeology: assessments and prospects*. *Proceedings of the International Conference for the 50th anniversary of the first Lapita excavation (July 1952), Koné-Nouméa 2002*. C. Sand (ed.):353-367. Nouméa: Le Cahiers de l'Archéologie en Nouvelle-Calédonie 15.

——2005a. An Archaeological Survey of the Upper Amehiti Sector, 'Opunohu Valley, Mo'orea, Society Islands. In *Bilan de la recherche archéologique en Polynésie française 2003-2004*. H. Marchesi (ed.):33-40. Punaauia: Service de la Culture et du Patrimoine, Dossier d'Archeologie polynésienne 4.

——2005b. *Annual Report of Archaeological Research Activities Carried out in the 'Opunohu Valley, Mo'orea, July 1-August 14, 2004*. Ministry of Culture, Territorial Government, French Polynesia.

——2005c. Household and Community Organization in the Late Prehistoric Society Islands (French Polynesia). Unpublished Ph.D. dissertation, University of California, Berkeley.

——2006. Society Islands (Central Eastern Polynesia) Chronology: 11 Radiocarbon Dates for the Late Prehistoric Expansion and Proto-Historic Periods in the 'Opunohu Valley, Mo'orea. *Radiocarbon* 48(3):409-419.

——2007. Power and Precedence in Ancient House Societies: A Case Study from the Society Island Chiefdoms (French Polynesia). In *The Durable House: House Society Models in Archaeology*. R. Beck (ed.):198-223. Center for Archaeological Investigations Occasional Paper No. 35. Carbondale: Southern Illinois University.

——2010. A Spatio-Temporal Analysis of 'Oro Cult *Marae* in the 'Opunohu Valley, Mo'orea, Society Islands. *Archaeology in Oceania* 45:103-110.

——2011. Multi-phase Construction Sequences and Aggregate Site Complexes of the Prehistoric Windward Society Islands (French Polynesia). *Journal of Island and Coastal Archaeology* 6:24-50.

Kahn, J. G. & P.V. Kirch. 2003. The Ancient "House Society" of the 'Opunohu Valley, Mo'orea: Overview of an Archaeological Project, 2000-2002. In *Bilan de la recherche archéologique en Polynésie française 2001-2002*, H. Marchesi (ed.):13-36. Punaauia: Dossier d'Archéologie polynésienne 2. Service de la Culture et du Patrimoine.

——2011. Monumentality and the Materialization of Ideology in Central Eastern Polynesia. *Archaeology in Oceania* 46:93-104.

——2013. Residential Landscapes and House Societies of the Late Prehistoric Society Islands (French Polynesia). *Journal of Pacific Archaeology* 4(1):50-72.

——*in press*. In the Shadow of Tohi-ve'a: Monumentality and Ideology in the 'Opunohu Valley, Mo'orea, Society Islands. *Bishop Museum Bulletin in Anthropology 13*. Honolulu: Bishop Museum Press.

Lepofsky, D. 1994. Prehistoric Agricultural Intensification in the Society Islands, French Polynesia. Unpublished Ph.D. dissertation, University of California, Berkeley.

Lepofsky, D. & J.G. Kahn. 2011. Cultivating an Ecological and Social Balance: Elite Demands and Commoner Knowledge in Ancient Ma'ohi Agriculture, Society Islands. *American Anthropologist* 113(2):319-335.

Levine, M.N. 2011. Negotiating Political Economy at Late Postclassic Tututepec (Yucu Dzaa), Oaxaca, Mexico. *American Anthropologist* 113(1):22-39.

Mu-Liepmann, V. & L. Milledrogues. 2008. *Sculpture*. Tahiti: Au Vent des Iles.

Moerenhout, J.-A. 1837. *Voyages aux Iles du Grand Océan, Contenant des Documents Nouveaux sur la Géographie Physique et Politique, la Langue, la Littérature, la Religion, les Moeurs, les Usages et les Coutumes de Leurs Habitants; et des Considérations Générales sur Leur Commerce, Leur Histoire et Leur Gouvernement, Dupuis les Temps les Plus Reculés Jusqu'à Nos Jours*. Paris: A. Bertrand.

Oliver, D.L. 1974. *Ancient Tahitian Society*. Honolulu: University of Hawaii Press.

Orliac, C. 1982. Matériaux pour l'étude des habitations protohistoriques à Tahiti (Polynésie Francaise). Unpublished Ph.D. dissertation, Université de Paris 1.

Sharp, W.D., J.G. Kahn, C.M. Polita & P.V. Kirch. 2010. Rapid Evolution of Ritual Architecture in Central Polynesia Indicated by Precise 230Th/U Coral Dating. *Proceedings of the National Academy of Science* 107(30):13234-13239.

Siegel, P.E. 1999. Contested Places and Places of Contest: The Evolution of Social Power and Ceremonial Space in Prehistoric Puerto Rico. *Latin American Antiquity* 10(3):209-238.

Trigger, B.G. 1990. Monumental Architecture: A Thermodynamic explanation of symbolic behavior. *World Archaeology* 22(2):119-132.

Voss, B.L. 2005. From Casta to Californio: Social Identity and the Archaeology of Culture Contact. *American Anthropologist* 107(3):461-474.

Wallin, P. 1993. Ceremonial Stone Structures: The Archaeology and Ethnohistory of the Marae Complex in the Society Islands, French Polynesia. *AUN 18*. Uppsala: Societas Archaeologica Upsaliensis.

This manuscript has been peer-reviewed. Received 26 July 2013; accepted 22 August 2013.